

**Abstract of the Disclosure**

A novel organic cation transporter (OCT) gene, OCT 6, and use thereof is described. The OCT6 gene is preferentially expressed in human hematopoietic tissues, including CD34+ cells and leukemia cells. Its narrow tissue distribution, substrate specificity, and close homology to other cell membrane transporters make OCT6 an attractive target for the treatment of myeloid diseases.